



Docket No.: 19036/37155  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Katsuaki Matsuo, et al.

Application No.: 09/806,615

Group Art Unit: 2853

Filed: March 29, 2001

Examiner: C. Shosho

For: RESIN COMPOSITION FOR INK JET  
RECORDING SHEET, THE RECORDING  
SHEET, RECORDING METHOD OF THE  
SAME, AND METHOD FOR....

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**DECLARATION OF KATSUAKI MATSUO UNDER 37 C.F.R. §1.132**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

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NOW comes KATSUAKI MATSUO one of the inventors of the subject matter of this patent application and, after being duly sworn, states as follows:

1. I have read the Final Rejection dated May 7, 2003 and I have studied, in detail, the prior art JP11-123869 ('869) and JP09-296035 ('035).

2. An ink acceptance layer in JP11-123869 is overlaid on a glue line that is formed on a support base-material layer, whereas the resin composition of the present invention is used for forming an ink-receiving layer directly formed on a substrate layer without interposing a glue line. The resin composition of the present invention has both high performance as an ink-receiving layer and high adhesiveness to a substrate layer despite the absence of the glue line.

3. Although a different hydrophilic resin, such as an acrylamide polymer, is disclosed in JP11-123869 and the claimed water-absorbing polymer is disclosed in JP09-296035, there is no disclosure in either reference directed to the claimed combination of water-absorbing resin and cationic polymer, or the adhesiveness to a substrate layer in either reference. There is no need for the resin composition in JP11-123869 to have adhesiveness to

a substrate layer because of the presence of the glue line. In fact, the acrylamide polymer in JP11-123869 has poor adhesiveness to a substrate layer.

4. Since it is impossible to achieve sufficient adhesiveness by applying the polymer combination of either prior art reference directly without an intermediate glue line onto the substrate, and since applicants have achieved this unexpected result, it is submitted that this new and unexpected result is clear evidence of the non-obviousness of applicant's claimed combination set forth in composition claims 11, 12-15 and 19-21.

5. As set forth throughout applicants' specification, the claimed composition (claims 10, 11-15, and 19-21) provides for rapid absorption of ink, with clear images that are essentially non-blurring, and can be applied directly to a substrate layer without an intermediate glue line. As set forth in the examples and comparative examples at pages 22-28 of the specification, the claimed composition is compared to the composition containing the claimed water-absorbing polymer combined with different cationic materials (comparative examples 1 and 2 on page 26). The ink absorption and ink blurring properties of the claimed composition were unexpectedly better for the claimed composition, as shown in the attached Table. 1.

6. Since the use of applicants' claimed composition, set forth in amended claims 10, 12-15 and 19-21, provides unexpectedly better results in ink jet printing, the claimed composition would not have been obvious to one skilled in the art.

7. All statements made herein of my own knowledge are true, and that all statements made upon information and belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like, so made are punishable by fine or imprisonment, or both, under section 1001 of title 10 of the United States Code and that such willful false statements may jeopardize the validity of the instant patent application or any patent issuing thereon.

July 23, 2003  
Date

Katsuaki Matsuo  
Katsuaki Matsuo

**Table 1 - Results of evaluation on each of the ink jet recording sheets**

	Example 1	Example 2	Example 3	Example 4	Comparative Example 1	Comparative Example 2
Ink absorption ability *	PM750C	○	○	○	θ	○
	BJC-455J	●	●	●	○	●
Ink blurring ** property (after 24 hours)	PM750C	1	1	1	4	2
	BJC-455J	1	1	1	3	2
Ink blurring property (after 120 hours)	PM750C	2	2	2	4	3
	BJC-455J	1	1	1	4	3

\* "●", highly excellent ink absorption ability without any change in the printed portion; "○", excellent ink absorption ability; "θ", fairly inferior ink absorption ability; and "x", cases in which the ink came off the dirty printed portion.

\*\* "1", any blurring was not observed at all; "2", slight extent of blurring was observed; "3", definite blurring was observed; and "4", blurring was manifested so that the printing became beyond recognition.

